



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Gontin *et al.*

Appl. No.: 10/651,049

Filed: August 29, 2003

For: **Speckle Reduction Method and
System for EUV Interferometry**

Confirmation No.: 8532

Art Unit: 2877

Examiner: Detschel, Marissa

Atty. Docket: 1857.2080000

Information Disclosure Statement

Mail Stop RCE

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Listed on accompanying IDS Forms are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98.

Where the publication date of a listed document does not provide a month of publication, the year of publication of the listed document is sufficiently earlier than the effective U.S. filing date and any foreign priority date so that the month of publication is not in issue. Applicants have listed publication dates on the attached IDS Forms based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may

not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

This statement should not be construed as a representation that a search has been made, or that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- ☐ 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.
- ☒ 2. Filing under 37 C.F.R. § 1.97(b). This Information Disclosure Statement is being filed within three months of the date of filing of a national application other than a continued prosecution application (CPA), OR within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application, OR before the mailing date of a first Office Action on the merits OR before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. § 1.114. No statement or fee is required.
- ☐ 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date

of the first Office Action on the merits, but before the mailing date of a Final Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.

- ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
- ☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☐ c. Attached is our PTO-2038 Credit Card Payment Form in the amount of \$_____ in payment of the fee under 37 C.F.R. § 1.17(p).
- ☐ 4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee.

Enclosed find our PTO-2038 Credit Card Payment Form in the amount of \$180.00 in payment of the fee under 37 C.F.R. § 1.17(p); in addition:

- ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
- ☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☒ 5. Some of the documents were cited in search reports by a foreign patent office in counterpart foreign applications. Submission of an English language version of the search reports that indicate the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.
- ☐ 6. A concise explanation of the relevance of the non-English language document(s) appears below in accordance with 37 C.F.R. § 1.98(a)(3).

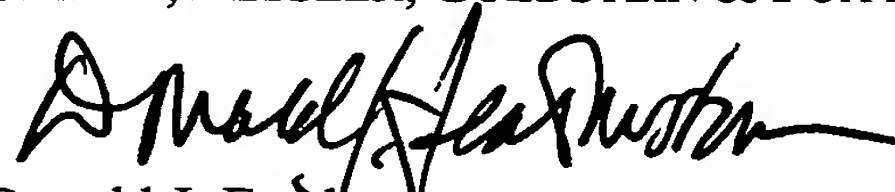
- ☒ 7. Copies of documents FP1-FP5 and NPL1-NPL13 are submitted. However, in accordance with 37 C.F.R. § 1.98(a)(2), no copies of U.S. patents and patent application publications cited on the attached IDS Forms are submitted.
- ☐ 8. Copies of the documents were cited by or submitted to the Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application No. _____, filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).
- ☐ 9. It is expected that the examiner will review the prosecution and cited art in the parent application no(s). _____ in accordance with MPEP 2001.06(b), and indicate in the next communication from the office that the art cited in the earlier prosecution history has been reviewed in connection with the present application.

It is respectfully requested that the Examiner initial and return a copy of the enclosed IDS Forms, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Donald J. Featherstone
Attorney for Applicants
Registration No. 33,876

Date: 9/23/05

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(202) 371-2600

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Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)				Application Number	10/651,049
				Filing Date	August 29, 2003
				First Named Inventor	Richard A. Gontin
				Art Unit	2877
				Examiner Name	Detschel, Marissa
Sheet	1	of	2	Attorney Docket Number	1857.2080000

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
	US1	5,486,950	01/1996	Collinge	
	US2	5,641,593	06/1997	Watanabe <i>et al.</i>	
	US3	5,958,629	09/1999	Yan <i>et al.</i>	
	US4	6,057,082	05/2000	Korth	
	US5	6,072,631	06/2000	Guenther <i>et al.</i>	
	US6	6,163,405	12/2000	Chang <i>et al.</i>	
	US7	6,392,792 B1	05/2002	Naulleau	
	US8	6,506,526 B2	01/2003	Stivers <i>et al.</i>	
	US9	6,686,098 B2	02/2004	Czech <i>et al.</i>	
	US10	2001/0051304 A1	12/2001	Stivers <i>et al.</i>	
	US11	2003/0081316 A1	05/2003	Goldberg <i>et al.</i>	
	US12	US 2002-0122162 A1	9/2002	Nakauchi <i>et al.</i>	
	US13	US 2001-0028462 A1	10/2001	Ichihara <i>et al.</i>	
	US14	5,715,039	02/1998	Fukuda <i>et al.</i>	
	US15	5,424,552	06/1995	Tsuji <i>et al.</i>	
	US16	5,222,050	06/1993	Marren <i>et al.</i>	
	US17	6,373,553	03/2002	Singh	
	US18	6,573,997	06/2003	Goldberg <i>et al.</i>	
	US19	6,650,399	11/2003	Baselmans <i>et al.</i>	
	US20	6,392,792	06/2002	Naulleau	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
	FP1	EP 1 106 972 A1	06/2001	Henshaw		
	FP2	EP 1 197 803 A2 & A3	04/2002	Van Elp <i>et al.</i>		
	FP3	EP 1 237 041 A2 & A3	09/2002	Subhash <i>et al.</i>		
	FP4	JP 2000-266914	09/2000	Toshitaka		
	FP5	EP 1 231 514 A1	08/2002	ASML Netherlands B.V.		
	FP6					
	FP7					
	FP8					
	FP9					

Examiner Signature		Date Considered	
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This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Complete if Known	
				Application Number	10/651,049
				Filing Date	August 29, 2003
				First Named Inventor	Richard A. Gontin
				Art Unit	2877
				Examiner Name	Detschel, Marissa
Sheet	2	of	2	Attorney Docket Number 1857.2080000	

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		Number-Kind Code ² (if known)			
	US21	4,413,909	11-08-1993	Pohle	
	US22	6,360,012	03-19-2002	Kreuzer	
	US23				
	US24				
	US25				
	US26				
	US27				
	US28				
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	US36				
	US37				
	US38				
	US39				
	US40				

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		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
	FP10					
	FP11					
	FP12					
	FP13					
	FP14					
	FP15					
	FP16					
	FP17					
	FP18					

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NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume issue number(s), publisher, city and/or country where published	T ²
	NPL1	Bjorkholm, J. E., "EUV Lithography - The Successor to Optical Lithography?", Intel Technology Journal Q3'98, 1998, pp. 1-8.	
	NPL2	Goldberg, K.A., <i>et al.</i> , "Extreme ultraviolet interferometry: at-wavelength testing of optics for lithography," The Advanced Light Source, 1998, at http://www-als.lbl.gov/als/compendium/AbstractManager/uploads/ACF4B6D.pdf , 4 pages.	
	NPL3	Goldberg, K.A., <i>et al.</i> , "Extreme ultraviolet interferometry: measuring EUV optical systems with sub-Å accuracy," The Advanced Light Source, 2001, at http://www-als.lbl.gov/als/compendium/AbstractManager/uploads/01125.pdf , 3 pages.	
	NPL4	Kolb, R., "EUV Lithography Making Possible Next Generation of Semiconductors," Sciencebeat [online], June 5, 2001, at http://www.lbl.gov/Science-Articles/Archive/euv_milestone.html (visited January 12, 2003), 4 pages.	
	NPL5	Lee, S. H., <i>High Accuracy EUV Interferometry</i> , at http://buffy.eecs.berkeley.edu/IRO/Summary/99abstracts/shlee.1.html (visited January 12, 2003), 1 page.	
	NPL6	Mansuripur, M., "The Ronchi Test," MM Research, Inc., at http://www.mmresearch.com/articles/article1 (visited January 9, 2003), 12 pages (also published in <i>Optics & Photonics News</i> , July 1997, pp.42-46).	
	NPL7	<i>Measurement Science in the Extreme Ultraviolet: Testing Advance Optics for Printing Integrated Circuits</i> , at http://www.als.lbl.gov/als/actrep/FileH.pdf (visited January 12, 2003), 2 pages.	
	NPL8	Naulleau, P. P., <i>et al.</i> , "Fabrication of high-efficiency multilayer-coated binary blazed gratings in the EUV regime," <i>Optics Communications</i> , Vol. 200, December 15, 2001, Elsevier Science B.V., pp. 27-34.	
	NPL9	Wyant, J. C., "White Light Extended Source Shearing Interferometer," <i>Applied Optics</i> , Vol. 13, No. 1, January 1974, pp. 200-202.	
	NPL10	Search Report from the European Patent Office for European Patent Application No. 04000512.6-2217, mailed January 3, 2005 (3 pages).	

Examiner Signature		Date Considered	
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NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume number, publisher, city and/or country where published	T ²
	NPL11	Search Report from the Danish Patent and Trademark Office for Singapore Patent Application No. 200400112-9, mailed August 20, 2004 (7 pages).	
	NPL12	English-language abstract for Japanese Patent Application No. 2000-266914, published September 29, 2000, <i>from</i> www.espacenet.com, 1 page.	
	NPL13	Copy of the Search Report for Singapore Application No. 200400111-1, issued on June 5, 2004.	
	NPL14		
	NPL15		
	NPL16		
	NPL17		
	NPL18		
	NPL19		
	NPL20		

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